CITY OF EDINA

2009-2010 Comprehensive Water Resources Management Plan Update

November 9, 2009

What is the Comprehensive Water Resources Management Plan?

- **Establishes goals & policies to address**
  - Stormwater Management and Flood Control
  - Water Quality Management
  - Wetlands Protection
- **Identifies & addresses current and future stormwater issues**
- **Identifies Implementation Plan (10 years)**
- **Communication & education tool**

What is the Comprehensive Water Resources Management Plan?

Plan provides the following benefits:

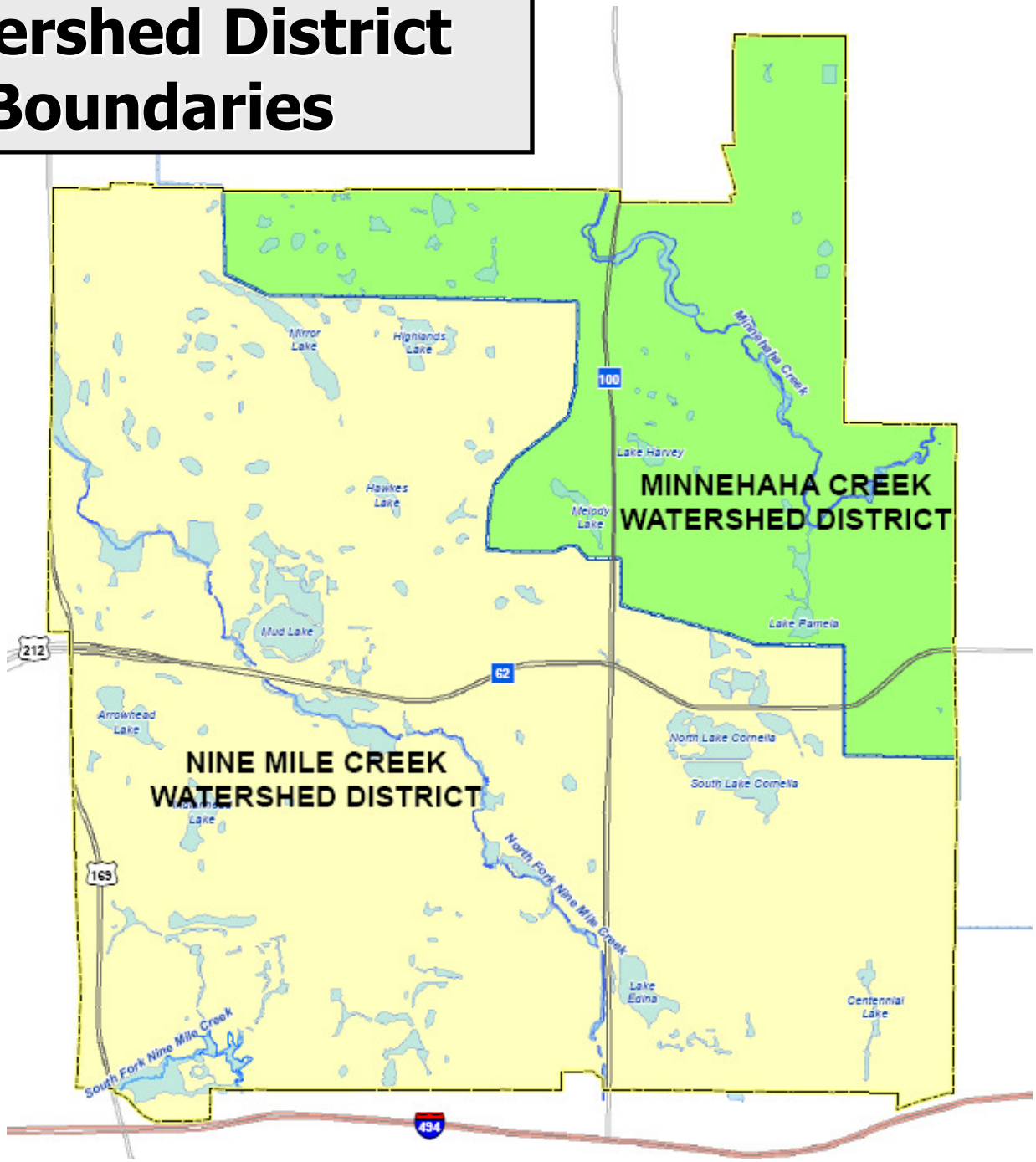
- Plan to help correct existing problems and prevent foreseeable future problems
- Communicate City programs & issues
- Information resource for staff, residents, & officials
- Stormwater planning for development & redevelopment
- Programmatic planning & budgeting

Why Update the Comprehensive Water Resource Management Plan?

Meet the Requirements of:

- **Metropolitan Council**
- **Statutory Requirements of MN Statute 103B**
- **Two Watershed Districts**
  - ✓ Minnehaha Creek Watershed District (MCWD)
  - ✓ Nine Mile Creek Watershed District (NMCWD)

Watershed District Boundaries



How is the Plan Organized?

- Chapter 1: Executive Summary
- Chapter 2: Introduction
- Chapter 3: Goals & Policies
- Chapter 4: Methodology for Modeling
- Chapters 5-14: Individual Drainage Basins
- Chapter 15: Issues and Implementation Program
- Chapter 16: Wetlands

Goals and Policies for Stormwater Runoff Management

- **Municipal drainage systems provide service (removal of runoff water) & protection (control of flood levels)**

- **Plan establishes design criteria to promote**
  - 10-year level of service
  - 100-year level of protection

- **Rules for development & redevelopment applied through local Watershed Districts**

Goals and Policies for Water Quality Management

- **Beneficial uses of lakes, streams, and wetlands should remain available to the community**
  - Aesthetic appreciation
  - Wildlife habitat
  - Nature observation
  - Recreational activities

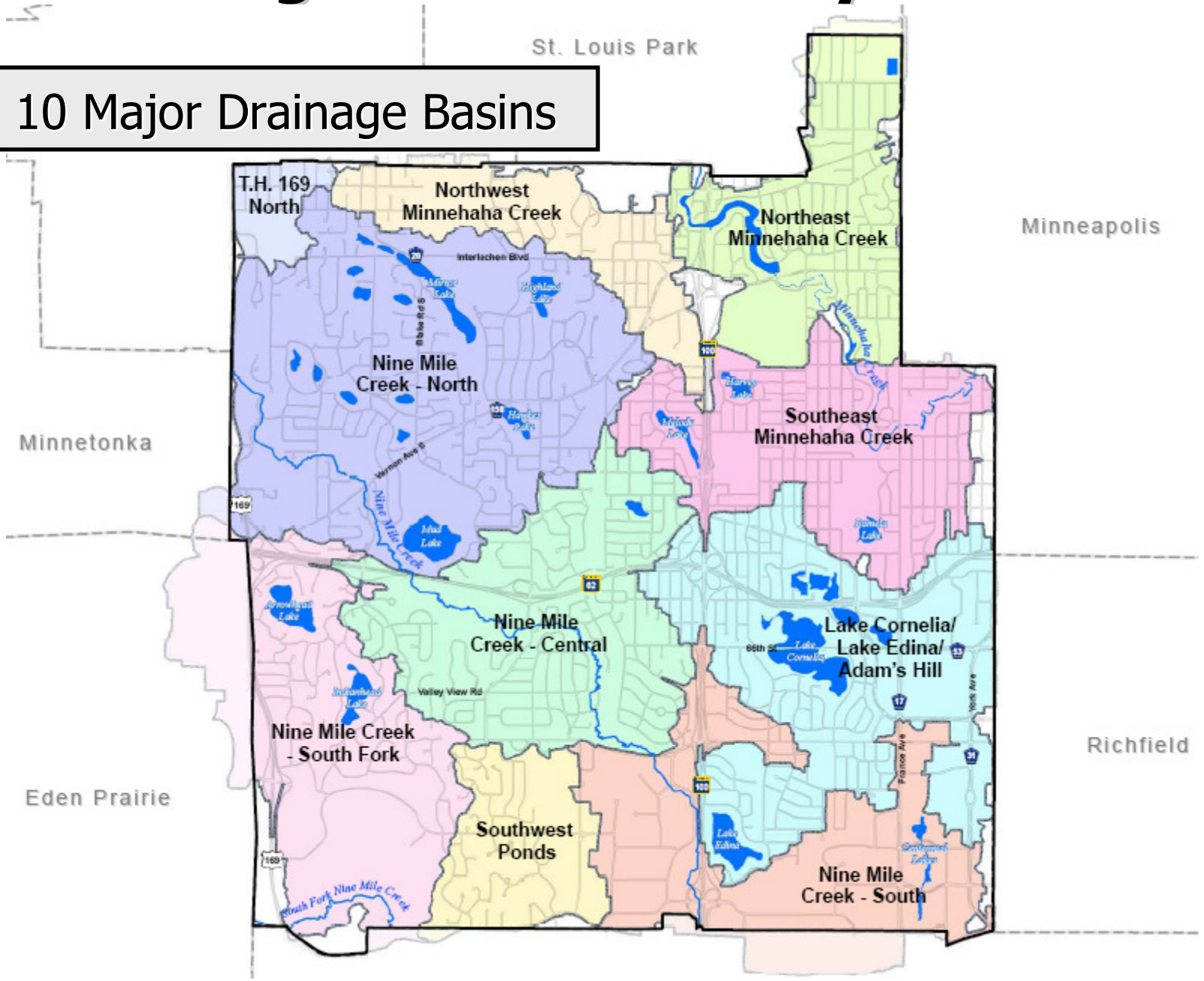
- **City works closely with the Watershed Districts on water quality protection**

Goals and Policies for Wetland Protection

- Goal to achieve no net loss of wetlands, including acreage, functions, and values
- City completed wetland inventory in 1999
- Minnehaha Creek Watershed District completed a comprehensive inventory & assessment in 2003
- Watershed Districts administer the MN Wetland Conservation Act (WCA) and additional wetland protection rules

Drainage Patterns in City of Edina

10 Major Drainage Basins



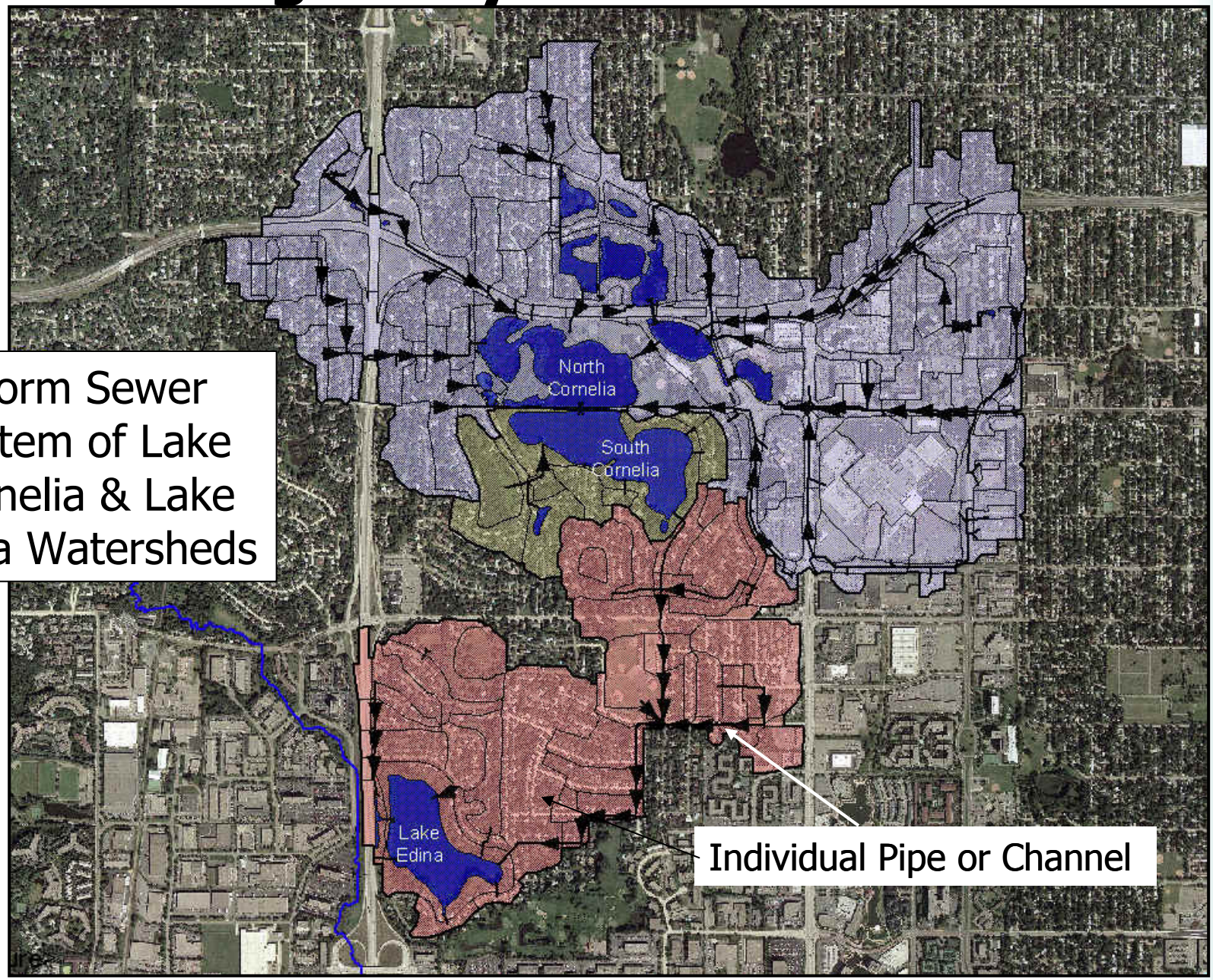
Comprehensive Modeling Completed for Each Drainage Basin

- **Modeling completed in 2003**
- **Hydrologic & Hydraulic Modeling (XP-SWMM)**

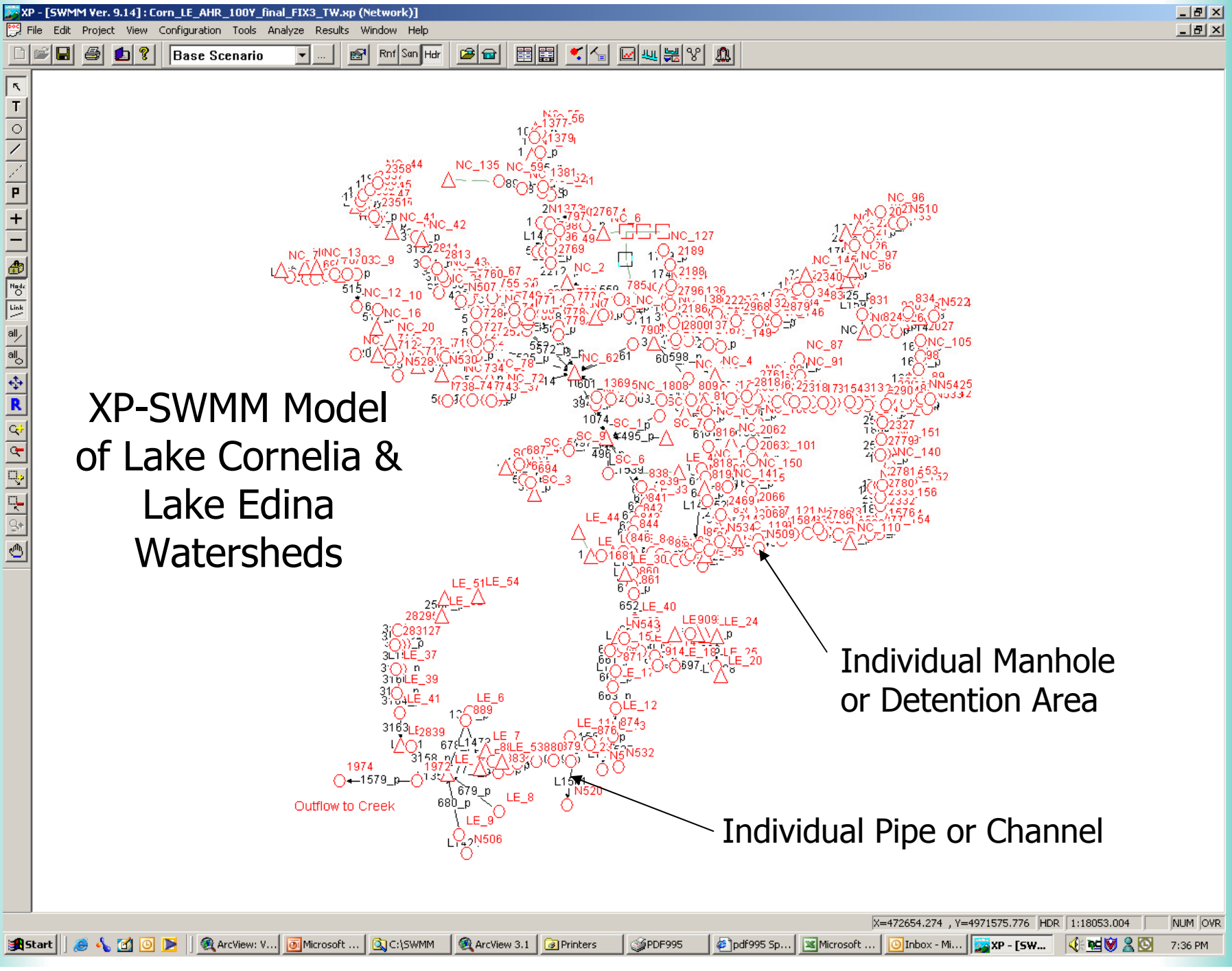
  -Hydrology: How much stormwater runoff is generated?

  - Hydraulics- How is the stormwater routed through the storm sewer system?

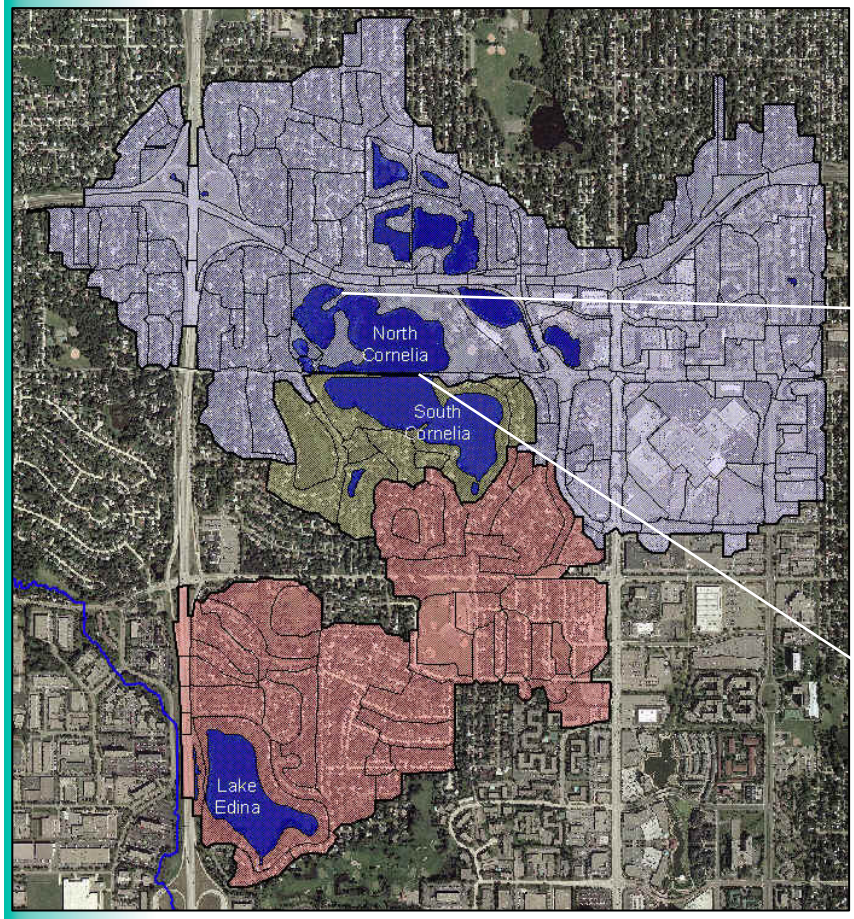
Building a City Stormwater Model



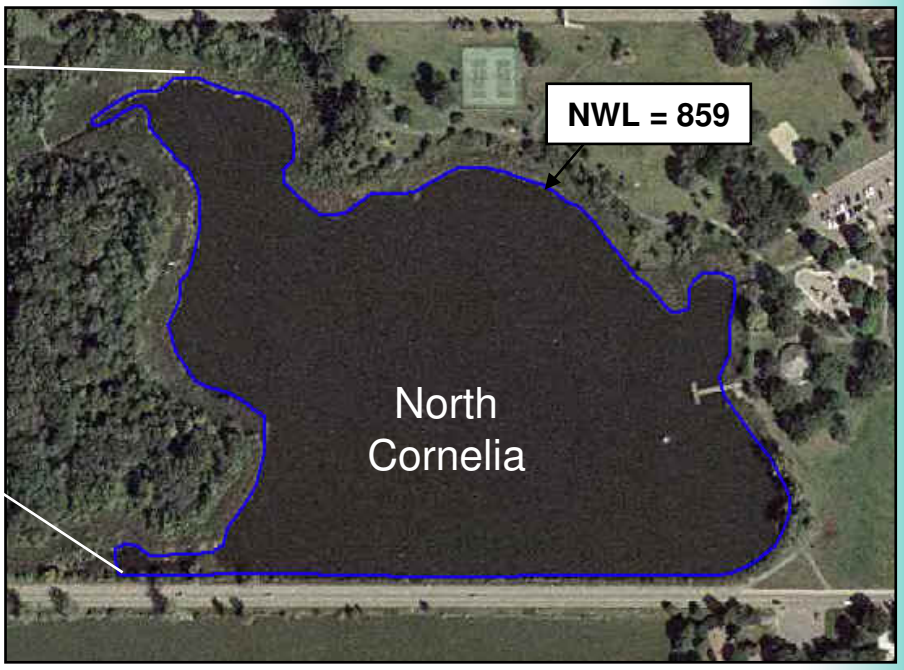
Storm Sewer System of Lake Cornelia & Lake Edina Watersheds


XP - [SWMM Ver. 9.14] : Corn_LE_AHR_100Y_final_FIX3_TW.xp (Network)]
File Edit Project View Configuration Tools Analyze Results Window Help
Base Scenario
XP-SWMM Model of Lake Cornelia & Lake Edina Watersheds
Individual Manhole or Detention Area
Individual Pipe or Channel
Outflow to Creek
X=472654.274 , Y=4971575.776
HDR
1:18053.004
NUM
OVR
Start
7:36 PM

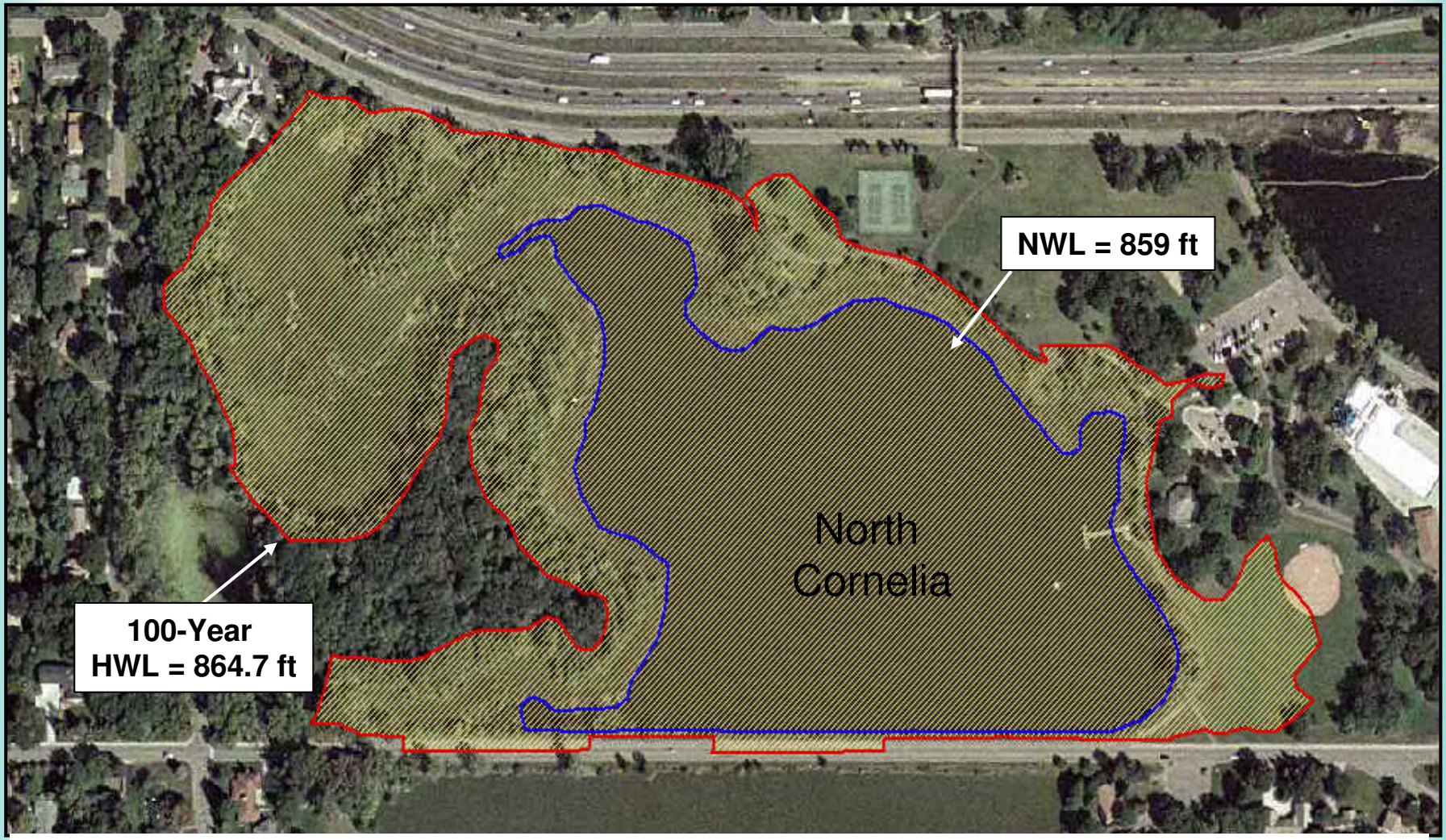
Benefits of City Stormwater Models



Models provide flood levels for interior water bodies within the City



Benefits of City Stormwater Models



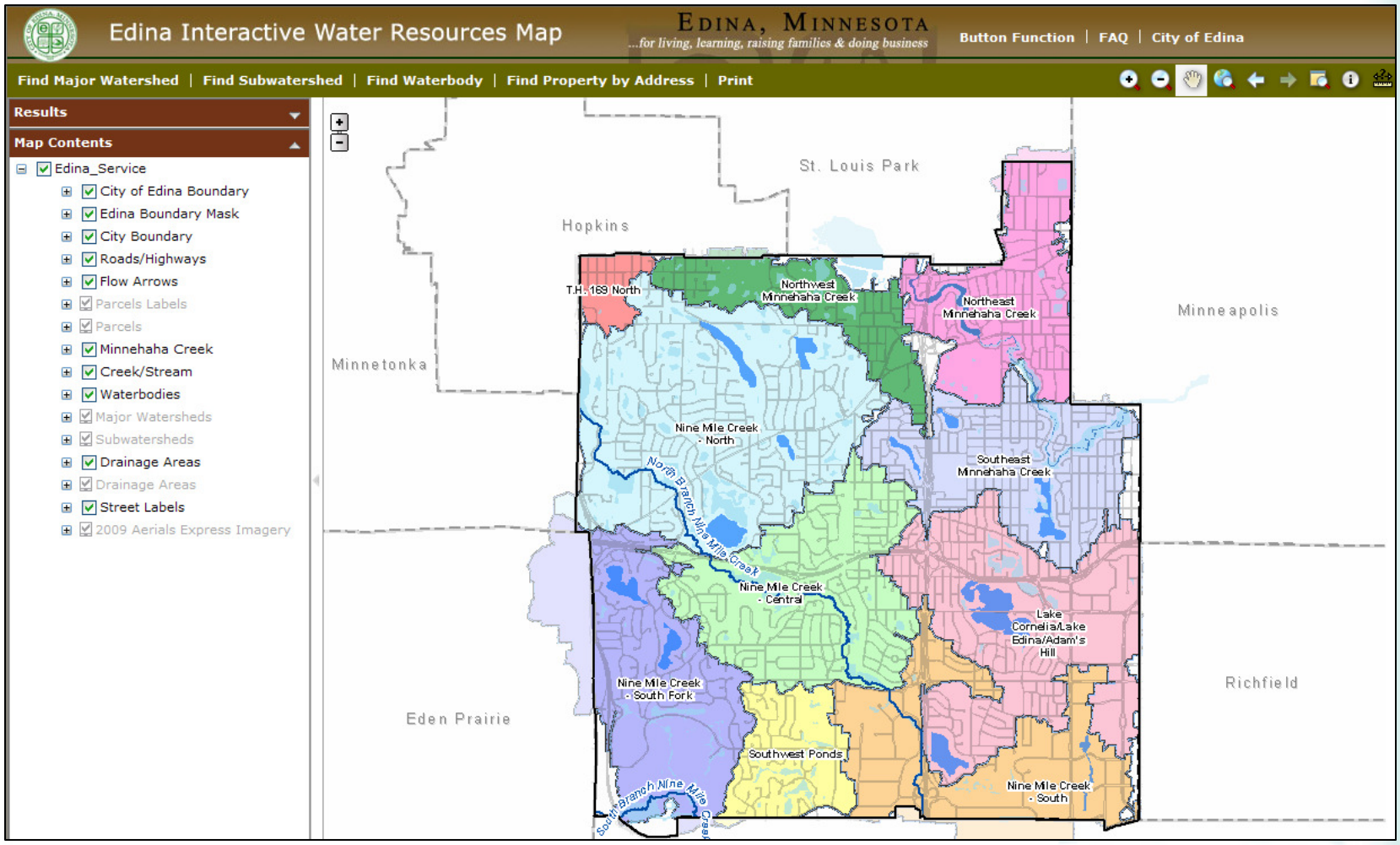
Models provide flood levels for interior lakes and ponds

Benefits of City Stormwater Models

Models identify areas with potential flooding issues

- Areas where streets may be flooded
- Areas where homes may be impacted

Modeling results to be available through Interactive Water Resources Web-mapping Tool



Water Quality Modeling Completed for Each Drainage Basin

- **P8 Model (Program for Predicting Polluting Particle Passage thru Pits, Puddles, & Ponds)**

  - Predicts generation of pollutants in stormwater runoff

  - Predicts transport and removal of pollutants through the stormwater system

- **Modeling focused on phosphorus**

Issues & Implementation Program

NPDES MS4 Stormwater Permit

-Permit addresses how the City regulates and improves stormwater discharges

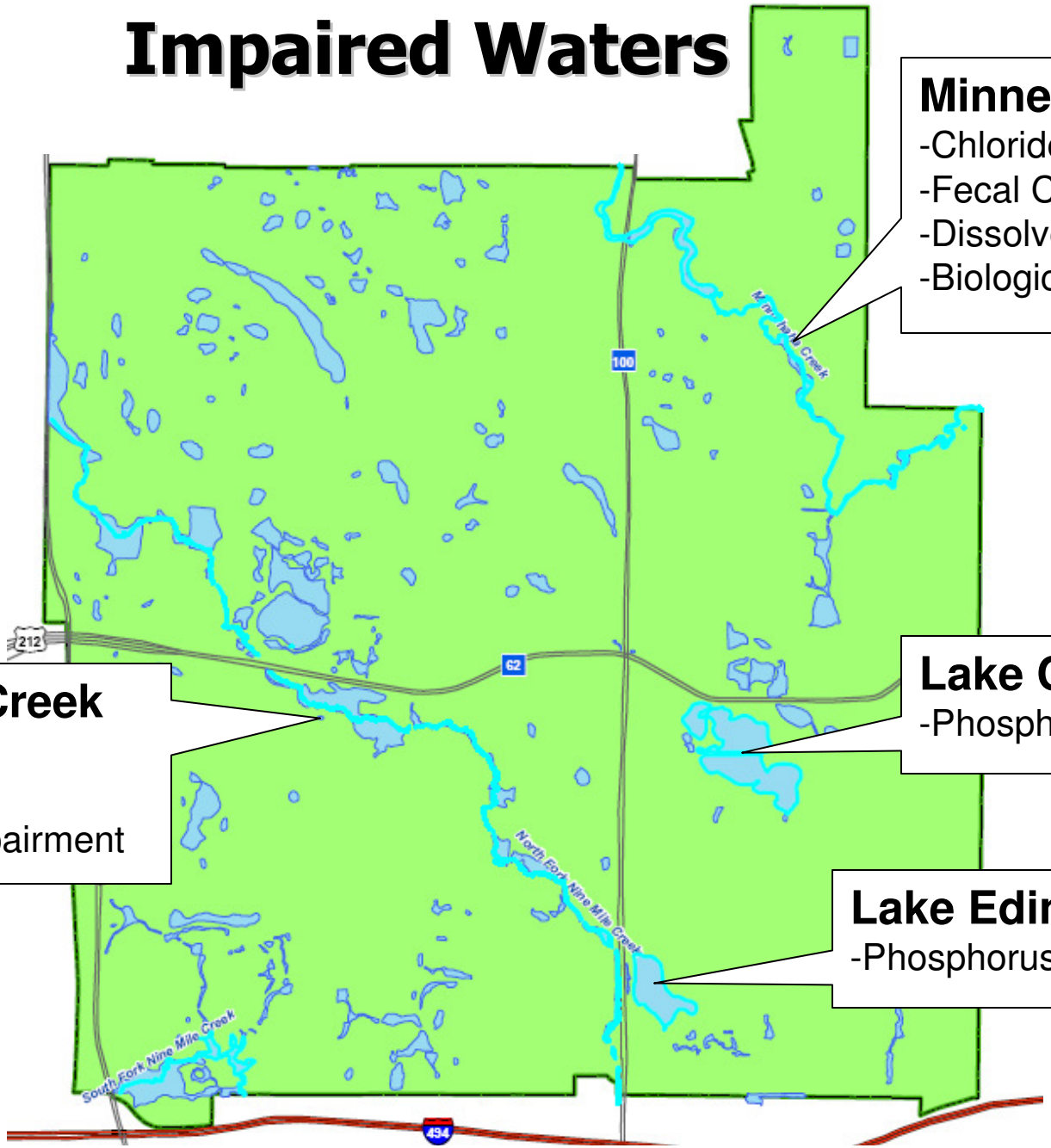
-Permit requires the City to implement a Storm Water Pollution Prevention Program (SWPPP)

Issues & Implementation Program

Edina SWPPP preparation, reporting & implementation tasks:

- Public education, participation & outreach
- Illicit discharge detection & elimination
- Construction site runoff control
- Post construction stormwater management
- Pollution prevention/housekeeping
- Plan for Nondegradation of waterbodies
- Address "Impaired Waters"

Issues & Implementation Program: Impaired Waters



Minnehaha Creek
-Chloride
-Fecal Coliform
-Dissolved Oxygen
-Biological Impairment

Nine Mile Creek
-Chloride
-Turbidity
-Biological Impairment

Lake Cornelia
-Phosphorus

Lake Edina
-Phosphorus

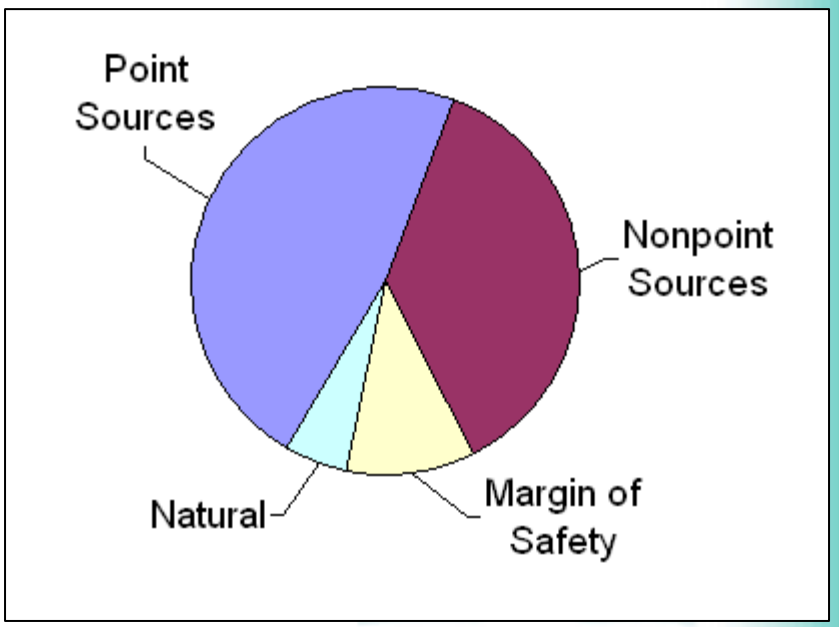
Issues & Implementation Program

TMDLs for Impaired Waters

-Clean Water Act requires development of a Total Maximum Daily Load (TMDL) for Impaired Waters

-TMDL establishes a pollutant loading capacity within a waterbody

-TMDL develops an allocation scheme amongst the pollutant contributors



Issues & Implementation Program

TMDLs currently under development for:

- Nine Mile Creek (Chloride & Biological impairments)
- Minnehaha Creek (Chloride, Fecal Coliform, and Phosphorus impairments)
- Lake Pepin (nutrient impairment)

City of Edina participates as stakeholder in local TMDL development

Issues & Implementation Program

Other Implementation Priorities:

- Storm Drainage System Inventory
- Improvements to stormwater management system in conjunction with City road reconstruction projects
- Reduction of infiltration and inflow of stormwater into sanitary sewer system
- Improving public education & information sharing through Interactive Water Resources Web-mapping Tool

CITY OF EDINA

Questions?